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(54) AUTOMATIC VENDING MACHINE FOR MUSIC SOFTWARE

(57)Abstract:

PURPOSE: To delete stored data in a priority order based on the number of times of selecting music and the selection time when a storage capacity is deficient, to lower the frequency of receiving data from a center unit and to shorten the sales time.

CONSTITUTION: When it is reported that the music is sold from a music sales control mechanism 18, a selection frequency registration mechanism 32 stores the name of the sold music and the summed-up of the number of times of selection and a selection time registration mechanism 33 stores the name of the music and the time, respectively. When the data of the selected music and new music, etc., are not stored in a storage device 12 and are received from the center unit 30 by a telephone line 29 or the like and the capacity of the storage device 12 is deficient, a music data elimination mechanism 31 decides the priority order of data elimination inside the storage device based on the number of times of selecting the music and the time and performs elimination. Thus, the frequency of reception from the center is reduced and

the waiting time at the time of sales is shortened. Also, by a reservation function 34, the next music is reserved even during communication.

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**CLAIMS**

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**[Claim(s)]**

**[Claim 1]** It reads, when the data of the selected music are stored in storage. In the automatic vending machine for music titles which receives and stores from center equipment when not stored, copies the data of the selected music to a storage, and sells them from storage. The data transfer means which receives music data by communication link from center equipment, and is written in a store, A time-of-day registration means to memorize time of day when each music is chosen, and a music deletion means to delete the music data in a store, When a data transfer means writes music data in a store and storage regions run short The automatic vending machine

for music titles characterized by having the control section which chooses the number of predetermined music as the old order of music selection time of day from the music which the time-of-day registration means memorized, and directs deletion of the music data to a music deletion means.

[Claim 2] It reads, when the data of the selected music are stored in storage. In the automatic vending machine for music titles which receives and stores from center equipment when not stored, copies the data of the selected music to a storage, and sells them from storage The data transfer means which receives music data by communication link from center equipment, and is written in a store, A count registration means to total and memorize the count as which each music was chosen, and a music deletion means to delete the music data in a store, When a data transfer means writes music data in a store and storage regions run short The automatic vending machine for music titles characterized by having the control section which chooses the predetermined number of music as order with few counts of selection from the music which the count registration means memorized, and directs deletion of the music data to a music deletion means.

[Claim 3] It reads, when the data of the selected music are stored in storage. In the automatic vending machine for music titles which receives and stores from center equipment when not stored, copies the data of the selected music to a storage, and sells them from storage The data transfer means which receives music data by communication link from center equipment, and is written in a store, A count registration means to total and memorize the count as which each music was chosen, and a time-of-day registration means to memorize time of day when each music is chosen, When a music deletion means to delete the music data in a store, and a data transfer means write music data in a store and storage regions run short After choosing the predetermined number of music as order with few counts of selection from the music which the count registration means memorized, The automatic vending machine for music titles characterized by having the control section which chooses the number of predetermined music as the old order of the music selection time of day which the time-of-day registration means memorized from the music, and directs deletion of the music data to a music deletion means.

[Claim 4] The automatic vending machine for music titles characterized by to have the control section which copies the data of the music memorized by a music reservation means to by which a data-transfer means chooses music from claim 1 as one term of the inside to claim 3 working in the automatic vending machine of a publication, a reservation music storage means memorize the music which the music reservation means chose, and after termination of a data-transfer means of operation and a reservation music storage means to a storage, and sells them from storage.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Industrial Application] This invention memorizes performance data etc. as digital data, and relates to the automatic vending machine for music titles (henceforth a vending machine) which copies to storages, such as a disk, by a user's selection, and is sold.

[0002]

[Description of the Prior Art] As a vending machine which sells a music title, there is Japanese-Patent-Application-No. 7 year 8574 No. for which the same applicant applied, for example. Although the data of music which memorized music data to the store and the visitor chose are copied on a disk and sold in this point \*\*, when there is no selected music in a store, it receives by communication link from center equipment, and the vending machine which writes in a store and is sold is indicated.

[0003]

[Problem(s) to be Solved by the Invention] However, there is the following problem in such a vending machine. That is, since the capacity of the storage in a vending machine has a limit, all the music for which a visitor asks cannot be made to memorize. Then, the need of writing in music by communication link comes out like the above-mentioned example of an indication. However, since writing music data in a store generally takes time amount from the selling time amount of the usual bevel-use vending machine etc. by communication link, there is a problem that a user's latency time is long. Furthermore, there is a problem that it cannot purchase unless a pre-communication link finishes, even if the music chosen as a degree is in storage during a communication link.

[0004] The purpose of this invention is offering the vending machine for music titles which time amount's does not require for goods purchase.

[0005]

[Means for Solving the Problem] It reads, when the data of the selected music are stored in storage. In the automatic vending machine for music titles which receives and stores from center equipment when not stored, copies the data of the selected music to a storage, and sells them from storage In the vending machine for music titles which the vending machine for music titles by invention 1 copies the data of the selected music to a storage from storage, and is sold The data transfer means which receives music data by communication link from center equipment, and is written in a store, A time-of-day registration means to memorize time of day when each music is

chosen, and a music deletion means to delete the music data in a store. When a data transfer means writes music data in a store and storage regions run short, the number of predetermined music is chosen as the old order of music selection time of day from the music which the time-of-day registration means memorized, and it has the control section which directs deletion of the music data to a music deletion means.

[0006] The data transfer means which the vending machine for music titles by invention 2 receives music data by communication link from center equipment, and is written in a store. A count registration means to total and memorize the count as which each music was chosen, and a music deletion means to delete the music data in a store. When a data transfer means writes music data in a store and storage regions run short, the predetermined number of music is chosen as order with few counts of selection from the music which the count registration means memorized, and it has the control section which directs deletion of the music data to a music deletion means.

[0007] The data transfer means which the vending machine for music titles by invention 3 receives music data by communication link from center equipment, and is written in a store. A count registration means to total and memorize the count as which each music was chosen, and a time-of-day registration means to memorize time of day when each music is chosen. When a music deletion means to delete the music data in a store, and a data transfer means write music data in a store and storage regions run short After choosing the predetermined number of music as order with few counts of selection from the music which the count registration means memorized, the number of predetermined music is chosen as the old order of the music selection time of day which the time-of-day registration means memorized from the music, and it has the control section which directs deletion of the music data to a music deletion means.

[0008] The vending machine for music titles by invention 4 is equipped with the control section which copies the data of the music memorized by a music reservation means to by which a data-transfer means chooses music from invention 1 working in one vending machine of the inside to invention 3, a reservation music storage means memorize the music which the music reservation means chose, and after termination of a data-transfer means of operation and a reservation music storage means to a storage, and sells them from storage.

[0009]

[Function] When according to invention 1 a data transfer means writes music data in a store and storage regions run short, a control section chooses the number of predetermined music as the old order of selection time of day from the music which the time-of-day registration means memorized, and directs deletion of the music data to a music deletion means. Since the music chosen comparatively recently remains in the vending machine, the communication link time amount for data transfer decreases, and time amount stops therefore, cutting to goods purchase.

[0010] When according to invention 2 a data transfer means writes music data in a store and storage regions run short, a control section chooses the predetermined number of music as order with few counts of selection from the music which the count registration means memorized, and directs deletion of the music data to a music deletion means. Since music with high purchase frequency remains in the vending machine, the communication link time amount for data transfer decreases, and time amount stops therefore, cutting to goods purchase.

[0011] When according to invention 3 a data transfer means writes music data in a store and storage regions run short After a control section chooses the predetermined number of music as order with few counts of selection from the music which the count registration means memorized, the number of predetermined music is chosen as the old order of the music selection time of day which the time-of-day registration means memorized from the music, and deletion of the music data is directed to a music deletion means. Since music with high selling frequency remains in new order in the vending machine, the communication link time amount for data transfer decreases further, and time amount stops therefore, goods purchase taking.

[0012] According to invention 4, a data transfer means copies to a storage the data of music with which the reservation music storage means memorizes the music which the music reservation means chose working, and the control section was memorized by the reservation music storage means after termination of a data transfer means of operation from storage, and it sells. Since reservation of the following music can be made, the latency time is made short and time amount stops therefore, goods purchase taking, even if it is during data transfer.

[0013]

[Example] Hereafter, drawing 1 – drawing 4 explain the example of this invention. This example is an example which combined invention 1 – invention 4. Moreover, although this invention and a bevel-use vending machine are combined and the money processor etc. is shared in this example, it is good also as a vending machine for music titles of dedication.

[0014] Drawing 1 is drawing showing the example of a transverse-plane appearance of the vending machine by this invention. Goods will be taken out by goods output port 6, if a music title is chosen with a manual operation button 4 while a user puts in money to money input port 5 and looks at the display panel 3 for music selection mentioned later. Drawing 2 is the example of a display of the above-mentioned display panel 3 for music selection. After the example of a display in the case of being under reception by communication link from center equipment when (a) does not have data of the selected music into a vending machine, and (b) push the after-mentioned preprogrammed key arranged at the manual operation button 4, the example of a display when choosing “1 \*\*\*\*\*” from a music name list with oblong cursor, and (c) are the examples of a display for checking the selected music name at the time of

purchase.

[0015] Drawing 3 is the example of arrangement of the above-mentioned manual operation button 4. The music of hope is chosen by the numerical keypad and the arrow key, and a preprogrammed key is pushed to purchase the following music while front music communicates. Drawing 4 is the control-block Fig. of this example. Main actuation is explained referring to drawing 1 – drawing 3. First, when a vending machine is in a selling standby condition, the menu screen which can choose from the genre of a singer name, a performance group, and music etc. the initial screen which shows under sale to the display panel 3 for music selection of drawing 1, or goods (music title) is displayed.

[0016] If selection according [ a user ] to the above-mentioned singer name by the manual operation button 4 is chosen, the switch input device 13 will distinguish the contents of actuation, and it sends to the music selling controlling mechanism 18. The music selling controlling mechanism 18 reads music related information from storage 12 (in the above-mentioned case, it is a list of singer names), and displays it on the display panel 3 for music selection through the display device 17 for music selection. In the above-mentioned case, the list of singer names is displayed on the music selection display panel 3. In addition, music related information, such as digitized performance data and a list of singer names, is beforehand stored in storage 12.

[0017] If the singer of hope is chosen from a singer name list with a manual operation button 4, since the sale album list of the singer will be displayed by the same actuation as the above, if the album to wish to have is chosen, the same screen as the contents of drawing 2 (b) will be displayed. In addition, its contents are the same although drawing 2 (b) is the after-mentioned screen for reservation. If 1 A music name, for example, a "sociability flower", is chosen here, the music name chosen like the screen of drawing 2 (c), a singer name, a price, etc. will be displayed.

[0018] If a user purchases this music and excels, money will be put into money input port 5, and the purchase key of a manual operation button 4 will be pressed. Coin MEKKU 23 distinguishes money through the money input port device 24, and the drink controlling mechanism 22 remits the injection amount of money to the music selling controlling mechanism 18. If there is more injection amount of money than the setting amount of money, the music selling controlling mechanism 18 will take out a disk (storage) from the blank disk storing device 19, and will equip the music write-in device 20 with it. If the music write-in device 20 reads the performance data which correspond from a store 12 and writes in a disk, the disk will be taken out according to the disk taking-out device 21 to goods output port 6.

[0019] Furthermore, the music selling controlling mechanism 18 notifies the sold music to the count registration device 32 of selection, and the selection time-of-day registration device 33. At this time, the count registration device 32 of selection records the number and the count of selection of music which were notified, and the

selection time-of-day registration device 33 records the number and selection time of day of music which were notified. Next, when the performance data of relevance are not memorized by the store 12, the data transfer controlling mechanism 26 requires the data of center equipment 30 through the music receiving device 27, a modem 28, and the telephone line 29 with the signal from the music selling controlling mechanism 18, and performance data are received to it. Received data are sent to storage 12 according to the data transfer controlling mechanism 26, and are memorized. Moreover, when a new song etc. is announced, similarly, performance data are received at any time from center equipment 30, and it memorizes to storage 12.

[0020] When performance data are newly received from center equipment 30 and the memory capacity of a recording apparatus 12 runs short, the music data deletion device 31 first makes the candidate of deletion the music data of 100 music of low order of the music of selection with few counts of selection, for example, a count, with reference to the contents of record of the count registration device 32 of selection. Next, the music data deletion device 31 sets the music data of 100 music as the object of deletion at the old order of the old music of selection time of day, for example, selection time of day, with reference to the contents of record of the selection time-of-day registration device 33. Furthermore, the music data deletion device 31 chooses the music for music data deletion of a predetermined number from the candidate for deletion chosen by the above. That is, it is made for the count of selection not to delete the new music data of selection time of day at least. In addition, based on each of the count of selection, or selection time of day, you may also choose the music for deletion.

[0021] Next, when a user wants to reserve the following music during the communication link with center equipment 30, a vending machine displays the screen which operated the preprogrammed key arranged at the manual operation button 4 shown in drawing 3, and was shown in drawing 2 (b), and inputs reservation music with a manual operation button 4. By this actuation, the reservation device 34 memorizes the number of reservation music, and the number of the music under communication link through the switch input device 13 and the music selling controlling mechanism 18. After communication link termination, if there is an input of a purchase key from a manual operation button 4, the music selling controlling mechanism 18 will be sold to the user who reserved the music of the number of music which was being recorded on the reservation device 34 like point \*\*.

[0022] Since the rate which has the music chosen as mentioned above in the store in a vending machine is made high, and the count of data transfer is reduced and it can be made to make reservation of the following music also in a communication link, time amount for goods purchase is made few.

[0023]

[Effect of the Invention] When the capacity of the storage which memorizes the time

of day and count of selection when music is chosen, and memorizes the music data based on a communication link runs short according to invention 1 – invention 3, only a predetermined number deletes the music data in storage at order with few (invention 1) and the counts of selection combining (invention 2) or time of day, and a count (invention 3) in the old order of selection time of day. The rate the music data chosen at the time of music title purchase are remembered to be in the vending machine becomes high, and time amount stops therefore, goods purchase taking.

[0024] Since according to invention 4 reservation of the following music can be made even if it is communicating with center equipment by establishing the reservation device of music about the above-mentioned invention, the latency time for purchase decreases and time amount stops goods purchase taking.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] Drawing showing the transverse-plane appearance of one example of the vending machine for music titles by this invention

[Drawing 2] For drawing showing center equipment and the example under communication link, and (b), in drawing showing the example of a display of the display panel for music selection of the vending machine for music titles by this invention, drawing showing the example of the music name list of [ when choosing reservation music ], and (c) are [ (a) ] drawing showing the example of a display for checking the music name which the user chose at the time of purchase.

[Drawing 3] Drawing showing the example of arrangement of the manual operation button 4 of the vending machine for music titles by this invention

[Drawing 4] The configuration block Fig. of the vending machine for music titles which is one example of this invention

### [Description of Notations]

2 [ -- Money input port, ] -- A goods selection carbon button, 3 -- The display panel for music selection, 4 -- A manual operation button, 5 6 [ -- Switch input device, ] -- Goods output port, 11 -- A vending machine, 12 -- A store, 13 14 -- A music performance controlling mechanism, 17 -- The display device for music selection, 18 -- Music selling controlling mechanism, 19 -- A blank disk storing device, 20 -- A music write-in device, 21 -- Disk taking-out device, 22 -- A drink controlling

mechanism, 23 -- Coin MEKKU, 24 -- Money input port device, 26 [ -- The telephone line, 30 / -- Center equipment, 31 / -- A music data deletion device, 32 / -- The count registration device of selection, 33 / -- A selection time-of-day registration device 34 / -- Reservation device. ] -- A data transfer controlling mechanism, 27 -- A music receiving device, 28 -- A modem, 29